FILIN, A. Ya.

V499 Scorpionis. Biul.Stal.astron.obser. no.6:24-27 '53. (MLRA 7:9)
(Stars, Variable)

FILIN, A.Ya.

Eclipsing variable V 687 Cygni. Per.zvezdy 9 no.3:211
Ja '53.   (MLRA 7:7)

1. Stalinatadskaya astronomicheskaya observatoriya (Stalinabad)
   (Stars, Variable)

FILIN, A. Ya.

Zero point on the period-luminosity curve for long-period Cepheids.
Biul.Stal.astron.obser. no.10:14-19 '54.   (MIRA 8:1)
    (Stars, Variable)

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Eleven stars considered to be probable variables. Astron.tsir.
no.164:20-21 O '55.   (MLRA 9:5)

1. Stalinabadskaya astronomicheskaya observatoriya.
(Stars, Variable)

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Some statintical studies of stars. Biul. Stal.astron.obsor. no.22/23:
33-34 '57.   (MIRA 11:7)
                    (Stars)

F, L IN, A Ya

AUTHOR: Filin, A. Ya.   33-4-3/19

TITLE: On Kinematic Properties of B-stars. (O Kinematicheskikh osobennostyakh B zvezd).

PERIODICAL: Astronomicheskiy Zhurnal, 1957, Vol. 34, No.4 , pp.525-538(USSR).

ABSTRACT: At the present time there is no generally accepted view as to the causes of kinematic properties of B-stars. Because of the current views on the origin of stars the problem of B-stars is particularly topical.

In 1904, Adams and Frost (Ref.5) discovered the so-called K-effect. Up to now about ten different explanations of this effect have been put forward (Refs.7-15). Torondzhadze (Ref.16) has critically reviewed all these hypotheses. The present author suggests that the general shortcoming of all these attempts to explain the K-effect consisted in that they all ascribed new properties to B-stars which, in turn, must be explained themselves.

Torondzhadze's work is the only one where the problem of the causes of kinematic properties of B-stars is correctly formulated. These properties are there regarded as consequences of initial conditions during the formation

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of the stars. Assuming that the origin of B-stars
surrounding the sun is connected with the expansion of
stellar associations, Torondzhadze attempts to explain
the kinematic properties of B-stars. However, the
hypothesis of expansion of stellar associations is not
well-founded (Cf. Kholopov, Ref.19 and Vorontsov -
Velyaminov, Ref.20).

The problem of the causes of kinematic properties of B-stars
is re-examined by the present author. Results obtained
are based on radial velocities. 1270 B-stars having known
radial velocities were used. The data of these stars
(radial velocities, spectra, distances, etc.) were taken
from the card catalogue of the Department of Stellar
Astronomy of the Shternberg State Astronomical Institute.

"Least squares" calculations for these stars lead to the
following results: 1. The constants of galactic rotation
A and B (Oort's coeffs.) are low. 2. The ratio of axes
of the ellipsoid of velocities which lie in the galactic
plane is close to unity (Table 2). At the same time, the
ratio does not differ from that generally accepted for
objects in plane subsystems. 3. The direction of the
major axes of the ellipsoid of velocities is inclined

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to the direction through the centre of rotation. 4. In the relations between other constants characterising the motion, no differences are found compared with other objects of the plane component. The number of possible factors which may have an appreciable effect on the kinematic constant is considered:

(A) Motion down the spiral arm is estimated to be almost negligible;
(B) The effect of the spherical component can explain only a small part of the decrease in the constant of galactic rotation, "A";
(C) The distortion of the values of "A" and "B" may be connected with an error in the determination of the mean distance of B-stars, i.e. it is caused by an inaccuracy in the mean absolute magnitude and a determination of the mean absorption . It is shown that these effects cannot explain the change in "A" either.

BO - B1 stars are found not to have any kinematic peculiarities. Kamm's function is studied and it is established that it shows anomalies for these stars in the neighbourhood of the sun. The north-south asymmetry

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On Kinematic Properties of B-stars.   33-4-3/19

        in proper motions and radial velocities is explained by
        the rotation of the local system.
        There are 5 figures, 11 tables and 36 references, 22 of
        which are Slavic.

SUBMITTED: December 7,1956.

ASSOCIATION: Stalinabad Astronomical Observatory of the Academy,
        of Sciences of the Tadzhik S.S.R. (Stalinabadskaya
        Astronomicheskaya Observatoriya Akademii Nauk Tadzhikskoy
        SSR)

AVAILABLE: Library of Congress

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Brief comments on changes in the brightness of 15 uninvestigated
variable stars. Astron. tsir. no.191:19-21 My '58.   (MIRA 11:9)

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DS Aquarii is a possible long-period Cepheid. Astron.tsir.
no.198:14 D '58.   (MIRA 12:7)

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                (Cepheids)

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1. Institut astrofiziki AN Tadshikskoy SSR.   (MIRA 13:2)
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Photographic observations of six variable stars. Biul. Inst. astro-
fiz. AN Tadzh. SSR no.31:33-44 '62.

Determining stellar comparison magnitudes for 15 variable stars.
Ibid.:49-51
(MIRA 17:11)

L 19331-63   EWT(d)/EWT(1)/FCC(w)/BDS/ES(v)   AFFTC/ESD-3/IJP(C)   Pe-4 OW

ACCESSION NR: AR3002044

SOURCE: RZh. Astronomiya. Otdel'nyy vypusk. Abs. 5.51.364   S/0269/63/000/005/0039/0039

AUTHOR: Filin, A. Ya.

TITLE: Use of the Kamm method

CITED SOURCE: Byulleten' Instituta astrofiziki. AN TadzhSSR, no. 32, 1962, 3-16

TOPIC TAGS: Kamm function, astronomical observation

TRANSLATION: To study the influence of random errors of radial velocities and distances and of the dispersion of velocities on determination of Kamm's function, the author constructs a kinematic model of a plane star system. For each of 1,380 points uniformly distributed in a circle with a radius of 3 kps, centered on the sun, for the law of radial velocities

$$= (a + bR^2) - 1 ,$$

(where R is the distance from the galactic center and a and b are constants), he determines the radial velocities, distances, the values of Kamm's function and

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other quantities. These data are plotted on a card. The influence upon Kamm's function of random errors of distances and radial velocities and the role of the dispersion of radial velocities are studied by adding to the card the values of the precise distances and radial velocities and the corresponding random magnitudes, with subsequent plotting of graphs of Kamm's function. The author concludes that in the presence of random errors alone, Kamm's method yields entirely reliable results. B. Fesenko

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FEYGIN, N.P.

The End!